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THE
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Rail Road News.

Capital Invested in Railroads in Massachusetts and New York.

The figures show an expenditure upon 1126 miles of railway of $49,531,166 70. Performing an annual service of 3,311,886 miles. Receiving from freight and passengers $4,495,983 93. And expending for operating the roads 2,429,671 04—leaving a return for capital of $2,066,312 89, or a little over 4 per cent. If we add to these items the aggregate of the Massachusetts railroads, as recently given, we have a total investment in both States of $103,560,932 28, producing a net income for 1849, of 4,891,010 36.

We apprehend that if the examination was extended into other States, the result would not be found much more favorable as to the general productiveness of this species of property. There are leading important routes not materially effected by competition, which afford the stockholders a fair remuneration for their investments, but these are the exceptions. The majority are either constructed where the amount of business is not sufficient to make them productive, or where competition in some form compels such a reduction of fare as to make the road unprofitable.

Ohio and Pennsylvania Railroad.

The Board of Directors, at the meeting last held in Pittsburg, determined to urge the work with all the means at their command, in order to have the road ready for the rails on the whole eastern division to the intersection of the Cleveland road near Mount Union, a distance of 80 miles, as early as practicable. The Board has likewise taken the preliminary steps for the purchase of iron rails, to be delivered before close of navigation, in the Autumn, to cover the entire Eastern division of the road.

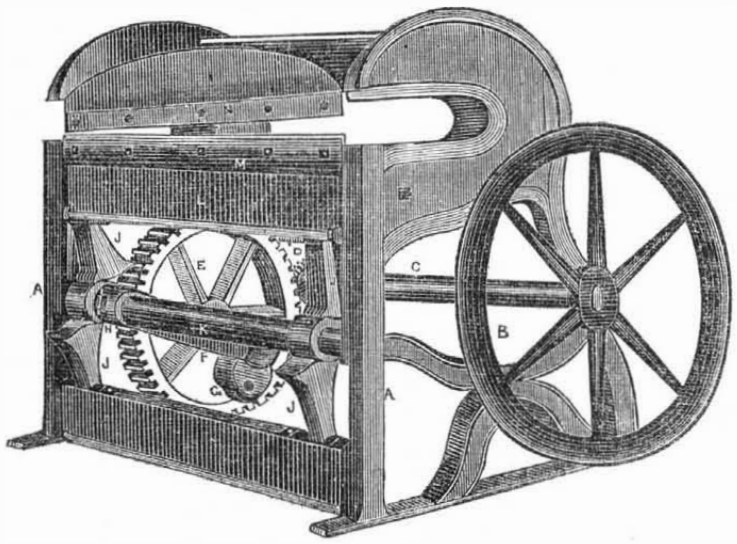
The city of Memphis has subscribed $500,000 to the stock of the Memphis and Charleston Railroad Company. We are very much pleased to notice the enterprize of the citizens of this flourishing city it has many decided advantages, especially in its location and climate and is very rapidly increasing in population, the spirit of improvement is evidently there.

The Opium Trade.

The traffic in this demoralizing drug in China has steadly increased, notwithstanding the efforts of the native authorities to suppress it. The possession of the Island of Hong Kong has given the English new and enlarged facilities; and the quantity of the drug shipped to China last year was 50,000 chests. According to the most recent intelligence it will reach 60,000 chests this year. As the opium from British India, the kind consumed in China, is in chests averaging each about 120 lbs., the above estimates indicate the prodigious quantities of 6,000,000 lbs. of the noxious drug introduced into that empire.

There were 127,000 more bales of cotton made in the United States in 1849, than in France. We shall soon be the *cotton cloth making* as well as the *cotton growing nation.*

THE ANTI-FRICTION SHEARS.---Fig. 1.

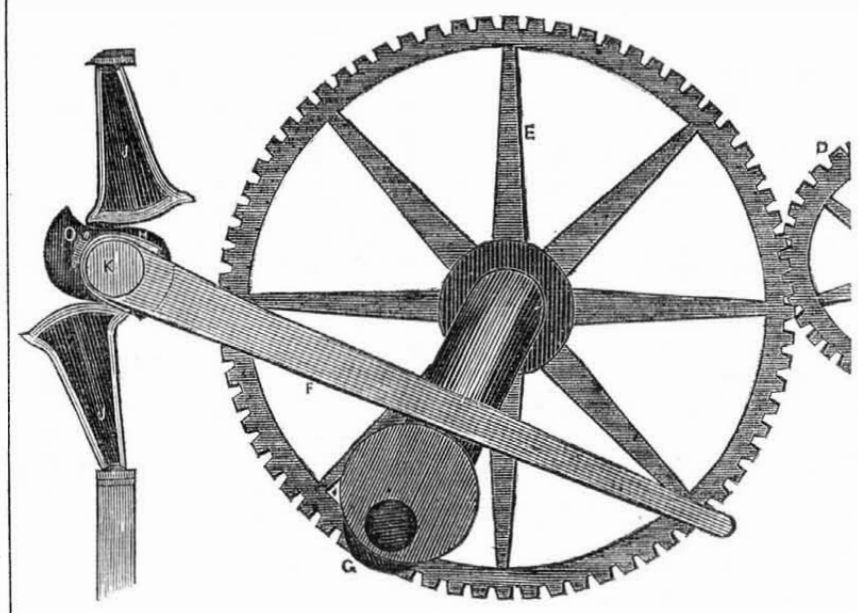


This week we devote a space in our columns to a cut representing another form of application of Mr. Dick's Patent. We have before, in no stinted terms, alluded to the triumphs of science over friction—as shown in this invention—and we look to the time when it shall be as universally adopted for purposes of great force, as the wants of an active and enterprising world can demand. Experiments in application will of course require much of inventive skill, and it may be years of experience, before all the varied and important uses to which it is applicable will be fully developed. Yet the elements of power are there —more simple and perfect than in any other known combination of machinery, and as simple as nature herself, and experience and skill will seek out those applications in forms of beauty, strength and convenience, and no doubt ultimate triumph and success will attend it; in fact we look with no little surprise at the progress already made in its application to hoisting, punching, shearing, pressing, stamping, cutting, &c., and believe we do not advise our readers against their interests, when we recommend a thorough investigation and fair trial, of the merits of this invention.

In the accompanying engravings, figure I is a perspective view of the new pattern for boiler shears, and figure 2 is a sectional view. (The letters in each represent corresponding parts.)

A A is an iron frame, 5 feet 6 inches on the base, 5 feet 8 inches high, and 3 feet 2 inches in the clean between the sides, with a bosom between the jaws 16 inches deep,—consequently a sheet of iron 4 feet wide, may be cut off anywhere in its length, and split 16 inches from the edge, any length. B represents the

Figure 2.



fly-wheel; C is the fly-wheel, clutch and pinion shaft; D is the pinion; E is the spur-wheel; F is a lever; G is a crank, H is a lever socket; J J are sectors; K is a shaft; M and N are the upper and lower shear, 37 inches long. O is an eccentric centre wheel, worked by the crank G and lever F.

This machine, in addition to parts shown in the drawing, will be furnished with a feeding table, insuring accuracy in cutting the lines. It will also be prepared for cutting with precision the champhered or corking edges of plates. This shear must become an important item to those manufacturing or using sheet and boiler iron, as it is intended to cut any thing up to 3-8 thick, and will do its work rapidly. Mr. Dick's manufactory is at the corner of Jane and Washington streets, in this city. Communications should be addressed (*p. p.*), to Joseph E. Holmes, agent, 794 Washington st.

Something in a Name.

The editor of the Æsthetic Journal confesses to having chosen an awkward name. Some good folks take his periodical to be Atheistic, and won't look at it. Others buy it to learn lessons in gymanastics, and are disappointed. The poor editor, worried for explanations, refers his persecutors to Brand and Francis' Dictionaries and the Penny Cyclopædia!

Useful Receipts.

Rhubarb Syrup.

Take of rhubarb 192 parts; dried root of wild succory 192 parts; dried leaves of fumitory 96 parts; dried leaves of scolopendrium 96 parts; berries of alkekengei, or winter cherry, cinnamon, bruised but free from dust, 16 parts; sandal-wood, bruised, free from dust, 16 parts; simple syrup 4,500 parts. Bruise the rhubarb, and mecerate it in 1,000 parts of hot water for twelve hours; strain with slight pressure, and preserve in a cool place. Place the residue of the rhubarb in a water-bath with the wild succory-root bruised, the leaves cut, and the berries crushed; add 5,000 parts of boiling water; infuse for twenty-four hours, and strain with pressure; decant liquor and filter it; mix with the simple syrup, and evaporate; then add the first infusion of the rhubarb, and digest for twelve hours in a water-bath with the cinnamon and sandal; strain, and finish the syrup.

Lemon Syrup

Take of the juice of lemons, strained, a pint; sugar 2½ pounds. Dissolve the sugar in the juice of lemons, with a gentle heat; then set it aside for twenty-four hours; afterwards remove the scum, and, if there be any dregs, pour the clear liquor from them.

Syrup of Peppermint.

Take of oil of peppermint 3 drachms; proof spirit a gallon; water a pint. Mix them; then with a slow fire let a gallon distil.

To Make Excellent Table Beer.

To two gallons, (eight quarts) of boiling water, put a pound of sugar, a quarter of an ounce of ginger, and two bay leaves, let this boil for a quarter of an hour, then let it cool to the heat of warm new milk, then add yeast and work it the same as other beer.

To Make Porter.

Take eight bushels of malt to the hogshead, and eight pounds of hops; put all into a copper, with three pounds of spanish liquorice bruised, while boiling, add also a pound of spanish juice, and twelve pounds of sugar, add yeast and work off.

To restore Ale or Porter that has Turned Sour or Flat.

Put into the bottom of an earthernware jug, a small portion of the super-carbonate of soda, (corresponding to the taint of the liquor) and pour upon it the sour or flat Ale or Porter, and immediately it will be restored to its sweet and wonted briskness.

Carbonic acid holds a pre-eminent rank in the formation and changes in many of the above processes. In all preceeding, tartaric acid and super-carbonate of soda compounds; the tartaric acid, entered into combination with the soda of the super-carbonate, and formed the tartarate of soda, whilst the carbonic acid was set at liberty as gas and produced the effervessing witnessed. In hard or sour Ale, the acetic acid of the ale joins the soda, and carbonic acid is set free.

Great Freshet in Upper Canada.

The neighborhood of Toronto, Canada West, has been visited with a most destructive freshet, carrying away dams, bridges, and ware houses, submerging farms and dwellings, and doing immense damage, on the streams for a distance around.

Camel Dead.

One of the lot of seven camels which recently passed through Hagerstown, from Baltimore, *en route* for St. Louis, the Hagerstown News understands, died in the neighborhood of Hancock, Md.

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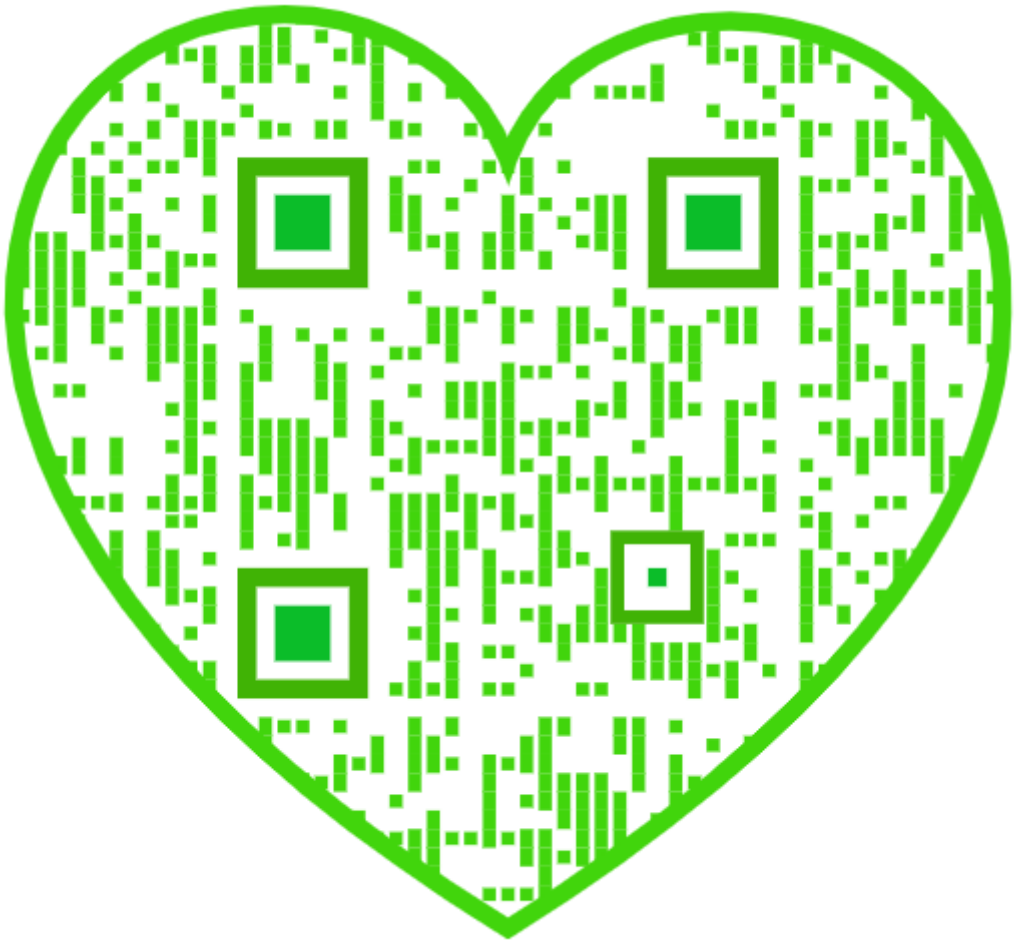

Miscellaneous.

Correspondence of the Scientific American.

WASHINGTON CITY, April 23, 1850.

The fate of the Patent Office Appropriation still remains undecided, but it will in all probability be settled during the present week.—The history of the matter does not at all justify the present narrow policy. It was in 1836 that Congress authorized the erection of the building, leaving it to the President to carry out; a plan was drawn by Mr. Elliot, for which he was paid $300. This was the only authorized plan, although there have been numerous projects by various Commissioners. The Secretary of the Interior, under the act of Congress, was directed to continue the structure, $150,000 being appropriated for that purpose. He, of course, notwithstanding the insufficiency of the sum, saw no alternative but to proceed with the original plan. To complete the original and only authorized plan will cost $600,000. Though Congress in the first place appropriated $108,000 for a Patent Office and furniture. Gen. Jackson, who had an eye to the future, adopted a plan, which to complete will cost over a million, including the sums already expended. Congress sanctioned the President's act by making a second appropriation, eight months afterwards, and finally increased the sum to nearly half a million, and Mr. Ewing has contented himself with carrying out Gen. Jackson's original design, authorized and repeatedly sanctioned by Congress.

The project of Washington & Co. to establish depots for the sale of patent rights referred to in your last number, is highly approved. It is thought, however, that a plan of this kind ought to be adopted by the Government itself, inasmuch as in a pecuniary point of view—to which standard every thing appears to be now reduced,—a small fee from every depositer of a model would amply repay the expenditure. It is suggested that a portion of every Custom House in all the large cities could be easily devoted to that purpose.

Since the deposit of the remains of Mr. Calhoun in one of Fisk's patent metallic coffins, I perceive in several newspapers enquiries as to their construction. The following, in the absence of a drawing, will give some idea of the Burial Case. It is similar in its outlines to the human body when placed in a horizontal position. It consists of an upper and lower metalic shell, which are joined together in a horizontal line in the centre, each part being of about equal depth. These shells are more or less curvilinear, and form each a narrow flange, which, when placed together, are bound by screws inserted through the flanges, and connected at the point of juncture with a substance which soon becomes as hard as the metal itself. The upper shell is raised work, and ornamented in the casting with the appearance of rich folding drapery thrown over the body. It has a heavy oval glass plate over the face, on which is screwed a polished metallic cover; on the breast of the upper shell is a smooth surface for an inscription. The cases are painted on bronzed to suit the taste of purchasers.

The body of the late Mrs. Madison is deposited in the first ever sold.

Mr. H. J. Rogers, of Bain's Telegraph Co., has completed an invention by which the transmission of news will be greatly facilitated. It will go into operation in a day or two, when a description will be furnished.

The article in your last number relative to the percussion cap machine now exhibiting at the Capitol, will give rise to an investigation in which it is to be hoped justice will be done. The soldier claims the invention as entirely his own, and says he can prove it. His machine, worked by power, cuts from the sheet of copper the star, forms, finishes and charges the cap without handling, at the rate of 5,000 per hour. In France the copper is cut in strips by machine shears, and each strip is rolled and cleaned in acid and water, and three different machines, worked and fed by hand, are used to form each cap. They also roll the caps in sawdust before charging. In England the copper is cut into double breadths by machine shears and then rolled by the strip. Two machines, worked by power but fed by hand, are used to form each cap. After rolling in sawdust, charging and varnishing, each cap is again placed by hand in a lathe to be again cleaned.

*

Another Franklin.

Mr. Nye, of New Bedford, Mass., presented this petition to the house last week :—"To the Honorable Senate and House or Representatives—Sirs : I wish to have my name changed to that of Franklin Macy, instead of Stephen Macy, being a relative of the illustrious Dr. Franklin, and *having a mind like his.* Which your petitioner will ever pray.

STEPHEN MACY.

[The above will be hailed with satisfaction by all true lovers of science, it having been supposed by many that Dr. Franklin's distinguishing characteristics would fail to descend upon any of his relatives, but this supposition is groundless as will be perceived from this petition. We propose that Mr. Macy be invited by the corporate authorities of this city to take possession of the cupale of the Post Office—the position once occupied by his "relative" when conducting important electrical experiments. Who second's the motion ?

Portrait of Columbus at Albany.

The portrait of the Discoverer of America, hanging in the N. Y. Senate Chamber at Albany, has at least an interesting history, if it be not, as it is said to be, an authentic original painting. It appears by the Journals of the Senate for 1784 that it was presented in that year by Mrs. Maria Farmer, in whose family it had been for some 150 years—purporting to have been taken in 1542. When the Capitol was removed from the City of New York to Albany in 1797, the portrait was left in the garret of the old City Hall, where it remained until 1827, when by order of the Senate it was reclaimed, restored and reframed, and is now one of the principal ornaments of its Chamber

Havana Cigars.

The official estimate of the manufacture of these articles is thus stated by a Havana correspondent of the Picayune : The report states that each cigar maker will roll daily 300 cigars, at an average of 50 cents a hundred. Supposing them to work twenty in each month, this will give 72,000 cigars annually per hand.—The consumption in the island they estimate at 440 millions, and supposing the exports to be 160 millions, this will give 600 millions as the annual cigar manufacture, giving employment in its vairous branches to fully 10,000 people, the value of whose labor is not less than $4,000,000. The consumption of cigars here seems disproportionate, but when we take into consideration that from childhood almost every one smokes, we do not doubt it is underestimated.

A New Mouth for the Mississippi.

The people of Louisiana are thinking seriously of opening a mouth for the Mississippi into Lake Pontchartrain, back of New Orleans. It is believed that it would relieve the river and its floods, and prevent any such terrible overflows as that of last year. In a commercial point of view the project is also commended. It would open a direct communication with the Gulf and Atlantic States, and render the troublesome, tedious and expensive navigation of the Mississippi useless.

The National Washington Monument.

The Council of the Chickasaw tribe of Indians have appropriated two hundred dollars towards the erection of the National Washington Monument. During the discussion of the subject, the declaration was made that the people had never spilt the blood of white men in war; and that they entertained the same veneration for Washington as their white brethren.

The Michigan Block for the Washington Monument.

The Legislature of Michigan has made an appropriation for a block of native copper from the Lake Superior mines, 3 feet long by 1½ feet wide and 2 feet deep, polished and bearing this inscription : from Michigan, "an emblem of her trust in the Union."

Foreign Miscellany.

The number of Building Societies in Great Britain in 1849 exceeded 2000, and the funds raised by them was about $10,000,000. These are tho savings of the lower and middle clsses.

An English Court has decided against the legality of Odd Fellows Societies. This point has been a disputed one for a number of years.

Dreadful storms had visited various parts of the British Coast. The New York Packet-ship J. R. Skiddy had been lost on the Irish coast and a number of the crew lost. The Dublin steamer Adelaide, to London, was lost at the mouth of the Thames and all on board lost, 150 persons.

Immense quanities of sand eels were found on the morning of the 8th of April, on the Ardbane Mountain, Ireland, about a mile from the Atlantic.

A Jewish Merchant named Judah Sebag, has suffered martyrdom at Alig, in Morocco.—He was envied by some Mahommedan Merchants, who accused him of blasphemy against Mahomet. The alternative was, to renounce his religion or be burned. He indignantly refused to deny his religion, and nobly chose death. He was put into a large fire, and devoured.

A Rich Present.

A magnificient gold snuff-box, richly studded with diamonds, has been presented by the Sultan Abdul Medjid, of Turkey, to Samuel Colt, Esq., of New York, in evidence of his high appreciation of the latter's Patent Repeating Fire Arm. It is beautifully wrought, and is valued at $2,500.

Taxed Heavily for Foreign Compliments.

Mr. Morse was taxed $90 at the N. Y. Custom House, for the splendid order, set in precious stones, for the wonderful application of magnetism to telegraphs, received from the Porte of Turkey, and recently Mr. Colt, the inventor of the six barrelled revolver, had a magnificently gold and enamelled snuff box, with the lid inlaid with brilliants, sent to him as the Turkish Sultan's appreciation of his famous pistols. Colt paid $500 to our Custom House for the cost of importing this present.

[The goverment should remit this tax.

A Drink of Beer Forever.

Mr. Emerson, in one of his lectures, tells a story to examplify the stability of things in England. He says that William of Wyckham, about the year 1150, endowed a house in the neighborhood of Winchester to provide a measure of beer and a sufficiency of bread to every one who asked it forever; and when Emerson was in England he was curious to test this good man's credit, and he knocked at the door, preferred his request, and received his measure of beer and his quantum of bread, though its donor had been dead seven hundred years.

An Operatives' Rolling Mill.

A site has been selected at Steubenville, Ohio, for the erection of a rolling mill. Some twenty of the puddlers and boilers who recently made an unsuccessful strike at Pittsburg, proffer $15,000 toward the erection of the works, on condition that the citizens of Steubenville will contribute $20,000 additional.—The mill, if put in operation, will employ over 100 laborers.

Hailstones in India.

In a paper lately read before a Scientific Society of Bombay, it is stated that hailstones in India are generally from five to ten or twenty times the size of those at home, from six ounces to a pound being nothing unusual.—Hail in England rarely exceed the size of oranges or pumpkins, and hardly ever less than walnuts.

Lieut. Col. John McCleilan, of the Topographical Corps of Engineers, has reeeived orders to take charge of the expedition for running the Mexican boundry line. The party will consist of 40 civilians, with two mounted companies of soldiers. The will leave on the 15th of May next for El Passo, where the survey commences.

American Invention in London.

The Baby-Jumper is an American invention that is having a great sale in England. The inventor has a shop in the Strand, and in his window are specimens of the jumping machine, and also a very beautiful wax model of a child, which is suspended in the "Baby-Jumper," and by the action of a spiral spring, the model baby jumps from morn till eve, to the infinite amusement of parents, young and old, and blushing misses and their sweethearts, as they join the crowd in front of the window.

The American clock trade was formerly carried on to a great extent in London, but latterly the sales of Yankee time-pieces have been quite limited. Saunder's Razor Strop is another American article that has recently been offered for sale in the English market. But as it is not advertised, few persons are aware that it can be obtained in London. The grand secret of the success of any article, is a liberal system of advertising in the daily papers.

Great Steam Hammer.

Messrs. Nasmyth & Gaskill, the celebrated machinists of Manchester, are manufacturing a gigantic steam hammer for an establishment in America. It weighs six tons, and will be shipped in a few days from Liverpool to its destination. It is the largest hammer that has ever been made in England. The machinery by which it will be worked, is brought to such perfection that a thick bar of iron can be sundered by one blow of the hammer, or any egg placed in a wine glass can be chipped at the top, without breaking the glass.

A Tall Chimney.

The New England Glass Company have commenced laying the foundation for a tall chimney, which they are about to build for their glass works in Cambridge. It is to be about 30 feet square at the base, and carried up to the height of 240 feet, 20 feet higher than the Bunker Hill Monument! Flues under ground are to connect their various furnaces with this chimney, thus making it do all the smoking (?) for their immense establishment.

Catching Pigeons in the West.

They take a wild pigeon, tie a string to his leg, sew up its eyes, and let it go; the bird flies into the air, and mingles with the first flock that passes, the sportsman then pulls his decoy bird to the place in which his net is concealed, the whole flock following and are led into the snare, when they are secured.

Profits of Southern Manufacturing.

The Augusta Manufacturing Company has declared a dividend of three per cent. out of the profits of the past three months. This is equal to 12 per cent. per annum, and is more, the Mobile Advertiser says, than can be made on the best managed cotton plantation in the South.

A Mine of Coin.

Some workmen on the bed of the canal near Albany last week struck upon a pile of sovereigns, and a regular grab game ensued. The first finder secured $600, and the others $150 a piece—in all about $1200. It is thought to have been accidentally dropped into the cana by some emigrant.

Yew Trees.

Yew trees are the longest lived of any other in Europe. There is one at Braborne in the County of Kent, England, which is allowed to be 3000 years old. The old English *yeomen* made their bows of the yew tree.

Great Speed of a Screw Vessel.

The Screw Steamer, Erin's Queen, made a passage from Belfast to London a short time ago, in 85 hours. The distance was 700 miles.

New Form of Letter Writing.

They are beginning to correspond in lithographic letters in France.

The cost of maintaining the United States squadron on the coast of Africa for the suppression of the slave trade, is $284,000 per annum, with little or no good results.

The British papers are publishing for gospel, the *hoax* story of the *Herald*, about the discovery of ancient ruins in California.

We are under renewed obligations to Senator Seward for Congressional documents.

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Steam Navigation.

Phenumatico Spheroidal System, for the Production of Steam, invented by Mr. Cestud de Beauregard.

Two months had scarcely elapsed since we spoke in the Tribune, of a great physical discovery made by Mr. Boutigny, in Paris, and we have already received the news of its reduction to practice; which if it prove true, will produce a great revolution in manufactures and the means of locomotion.

Every body has remarked that when drops of water fall upon the cover of a hot stove, they aggregate themselves into little balls, rolling for an instant like mercury in a glass, and a moment after disappearing in steam.

Mr. Boutigny, a French chocolate maker, starting from this fact, unexplained by any theory known at the time, some years ago made a series of experiments upon what the learned now call the Spheroidal or fourth state of water. Two years since Mr. B. published on this subject, a book which is of the most attractive kind, and he says, at the close, that he is in the way of finding the principle of a practical application to the formation of steam.

On speaking to Mr. Boutigny on this subject you recognize a first rate chemist; but though he has a theoretical knowledge of mechanics, he is not an engineer.

Happily, at this point of the discovery, a civil engineer, Mr. Cestud de Beauregard, entered the field, and, as will be seen by the following, has reaped a rich harvest.

In the Rue du Faubourg St. Denis, No. 162, Paris, Mr. C. de B. has erected a steam engine of 500 horse power on his new plan. In place of the common boiler, with its tubes and other complications, he employed a single vessel with a flat bottom, about one fiftieth as large as an ordinary boiler of the same power. It is inclosed in a brick furnace, above a fire-grate of reduced dimensions. This vessel is always empty of water. Connected with the bottom are two pigometers, to indicate its temperature, and on the cover is a valve, which you open when you wish to stop the engine in an instant. No manometer or safety apparatus is needed.

The work is so constructed as to keep the bottom of the boilers at the temperature of 750° Fahrenheit, and the principle which serves for a basis is this:

When a small quanity of water is cast upon a surface heated to 750° Fahrenheit or more, it is reduced to steam which is formed and remains at the same temperature of 750°.

To use the engine one or two cubic inches of water thrown into the hot vessel, the water is all instantly reduced to steam, heated to 750° and so expanded that it occupies all the entire vessel, with the pipes and begins to set the piston into motion. After that the engine itself supplies the boiler with the requisite small quanity of water.

The steam leaves the cylinder at the temperature of 580° and passing through the water reservoir of a coil of pipe, heats that water and raises it to 212° before escaping into the atmosphere, or before being reduced to water.

For the last three months, Mr. Beauregard's works have been accessible to every body.—The first engineers and men of science in Paris, have been there engaged during that period in every kind of experiment; the result of which is perfectly satisfactory and leads to the following conclusion, with regard to the new invention:

1st. Economy of fuel of over fifty per cent. The best boilers known require three pounds of coal per hour for each horse power. The new system only from one to one and half.

2d. Reduction in the weight of machinery over fifty per cent.

3. Security from explosion. The safety apparatus used in it is simply to prevent the boiler from being injured by the fire; none is necessary to prevent explosions, the vessels being always empty of water and empty of water and steam, when the engine rests.

Supposing all this true, as we hope it may prove to be, the discovery must produce a great change in all branches of mechanics with a reduction of the cost of many articles of first necessity. But the main result will surely be increased speed in steam navigation. The reduction of weight in the new boiler will give us power double that of those now in use without changing the draft of the vessel; and by the reduction in the consumption of fuel the same cargo of coal will be sufficient to sail the same number of days even with engines of double the present power. But as the trip will be performed in a less number of days a diminution in the quantity of coal taken on board will still be possible.

Victor Beaumont, Civil Engineer.

[As we expect more from professional men than others, Mr. Beaumont should have made himself better acquainted with the history of steam before claiming the discovery of the "spheroidal" state of water for a Parisian chocolate maker of the present day. There is not an American or English Engineer, but has been long acquainted with the fact, that water assumed a sphereidal form (separated into hissing globules,) when in contact with red hot metal; and M. Boutigny's new discovery is exactly one hundred years old. In 1750 a Mr. Payne, an English engineer, invented and put in operation an engine operated by steam generated by a very ingenious apparatus kept at a low red heat. The apparatus was termed a "dispenser," and the cold water was showered upon the hot vessel, which was an iron frustrum of a cone, by an exceedingly ingenious arrangement. When this discovery was brought out it was concluded that a saving of 60 per cent. of fuel would be the result, but it only showed, the state of science at that day, and it seems that the French engineers are considerably behind the age in respect to steam engines now, as we have had abundant evidence in the line of steamships which for a brief period visited our port and that of "Halifax."

In the above, it is stated that the principle of Boutigny's invention is, that when a small quantity of water is cast upon a heated surface of 750° it is reduced to steam which remains at 750° also. This is certainly a strange and erroneous doctrine. It makes no matter how hot the vessel is which generates steam, if it has room to expand, its temperature will be always 212°. If it were possible, that a vessel at 750° communicated 750° degrees of heat at once to water vapor,—then 750° would be abstracted from the vessel, and what profit would there be at any rate, but who does not know the heat of all steam (not surcharged) is uniform. The conducting of the steam from the cylinder of the engine is a common plan in this city and others, with high pressure engines, but it is a very indifferent substitute for the condenser and vacuum. The plan of Mr. Frost, of Brooklyn, to generate steam at 212°, in contact with water, and then apply heat to the steam out of contact with water, is a far more ingenious and scientific plan than Boutigny's.

It is stated in the above, that there "will be greater safety from explosions;" we have a different opinion. If the boiler is empty of steam and water, when out of work, it will not be out of air, and if by the least inadvertance the boiler becomes red hot, and the steam generated as described at starting, an explosion will immediately be the result, for the oxygen of the water will combine with the metal, hydrogen will be set free, and combining with the oxygen in the air in the boiler, there cannot fail to be an explosion. One grand thing to guard against in steam boilers, is the "spheroidal" state of the water. Armstrong wrote upon this long before Boutigny thought about it. For marine boilers Boutigny's plan would never answer for a single day. The incrustation of salt on the boiler would soon *salt the system.*

But in connection with experiments on steam, there is another name, which if not, should be familiar to every American. It is that of Jacob Perkins, the American inventor, who, at a good old age, died in London last year. Mr. Perkins may be said to have "forded all the depths and shoals" of steam. His most feasible plan, in 1822, to save fuel, was the subjecting of water under an enormous hydraulic pressure in a strong vessel to a great degree of heat without steam in contact, and then by pumping a small quantity of cold water into it, another quantity of hot water was expelled into the empty cylinder, and immediately flashed into steam. It was stated that water could be heated with very little more fuel to 500 atmospheres than it took to raise it to five, but events falsified the predictions made about this invention, although it certainly was a far better plan to generate steam for saving fuel, than to employ water in a "spheroidal" state, for the spheriods never rise above 205°, and it is well known to men of science, that a quantity of water which will boil away in one minute at 212°, will, if thrown upon red hot iron, take little less than one hour to evaporate. So much, then, for this great saving of fuel. Some one may ask the question, "will water be converted into the *shperoidal* state if admitted into a vessel at 750, as stated by Mr. Beaumont? Yes, at a far less temperature, and Mr. Boutigny himself has converted water to this state in a capsule floating on oil heated only to 340°, consequently if this be the lowest temperature that will convert cold water into a spheroidal state, the vessel to generate steam most effectually, must be kept a few degrees below this, and this is perfectly demonstrable to any person who will try the experiment with a platinum or copper flask.

We will say something more upon this subject next week.

Alabama Enterprise.

One of our correspondents, from whom we shall hear frequently, has written an able article to the Selma Tribune on the prospects of the Alabama and Tennessee Railroad, from which we select the following extracts, to let our readers know what Alabama is about in the way of railroads:

"Having just returned from North Alabama and taken a careful look at all the prospects of the Alabama and Tennessee Railroad, I can assure you all things appear favorable for the speedy completion of the enterprise.

We opened books for a few days on the east side of the Coosa river and obtained $160,000 subscription to the capital stock of the company. This, with our other subscriptions and other appropriations, amounts to $1,000,000. This is positive and unquestionable, and there are a number of places we have not yet visited where we shall obtain stock. Nothing but vigilance is now wanting to carry the enterprise into operation in less time than any other work of the kind in the south.

The first 150 miles of our road will put us in connection with the following places: by steam conveyance, Rome 60 miles; by railroad to Savannah, Augusta and Charleston; by railroad and steamboat to Knoxville, Lynchburg and Baltimore—the road now under contract; by railroad to Nashville and the Ohio river; and should our North Alabama friends succeed in their undertaking, we shall be connected by railroad with the Mississippi river at Memphis. With all these roads diverging from the terminus of our road, through every part of the United States, who cannot see that our road, being the principal outlet to the Gulf of Mexico in the direction of our newly acquired possessions, will at once become the great thoroughfare to the south. It is well known that South Alabama and Florida are supplied from Tennessee and Kentucky with most of their hogs, horses, mules and neat cattle. These will at once embrace the advantage of railroad transportation. Connect with this the fact that all the mineral products of the State lie along this route, and you have the great outline of our enterprise. There are 1800 square miles of coal field in Alabama, most of which will be accesssible to this road. The immense water power of the Cahawba and its branches and the Coosa and its tributary streams, pouring their rapid torrents along their rocky beds uninterrupted by manufactories at present, cannot go long unimproved. The vast quntities of iron that abound in every part of Shelby, Talladega, Benton and St. Clair counties will yield a constant freight. There are besides limestone, marble, and granite of the best quality for ornamental and building purposes, with a great variety of other minerals, such as lead, tripoli, lithography stone, manganese, slate, grindstone and other valuable products, with an agricultural soil unsurpassed by any in the world in the production of corn, cotton and wheat. Then the climate is most delightful, neither too hot in summer nor too cold in winter, making it the place of resort for health and amusement at all times of the year.—These vast sources of wealth and commerce will pour a travel and trade upon our road and a stream of gold into your city, I am confident, that will more than realize our most sanguine expectations."

[This road commences at Selma, and terminates at Gunter's Landing, on the Tennessee river; the distance is 185 miles. The State has appropriated $300,000 to the work. This is the first work of internal improvement which Alabama has engaged in as a State. The Southern States are beginning to devote great attention to commercial communication, manufactures and the developements of the mineral resources.

World's Exhibition of Industry for 1851.

Everybody has heard of the Grand Exhibition of Industry of all nations, which is to be held in London next year. The Queen has issued her *commission* for it, appointing her consort, Prince Albert, first on the list, and a great number of others, all men of eminent abilities, and many of them possessing great scientific attainments, and some well acquainted with all kinds of machinery. John Scott Russell, a first rate engineer and mechanician, and S. T. Northcote, the celebrated architect, are appointed Secretaries, and the Executive Committee is composed of H. Cole, C. W. Dilke, George Drew, F. Fuller, R. Stevenson, and Wyatt, the sculptor, for Secretary.

The exhibition will be divided into—

1. Raw materials and produce illustrative of the natural productions on which human industry is employed.

2. Machinery, for agricultural, manufacturing, engineering and other purposes, and mechanical inventions, illustrative of the agents which human ingenuity brings to bear upon the productions of nature.

3. Manufactures, illustrative of the results produced by the operation of human industry upon natural productions.

4. Sculpture, models, and the plastic art generally, illustrative of the taste and skill displayed in such application of human industry.

Full instructions about the Exhibition, and the size, &c., of the articles to be exhibited, together with the way of distributing the prizes, have not yet been published.

Sleighing in April.

The snow on the Heldeberg in New York State, is still quite deep, and the sleighing there was never better than it is] at present. In the upper part of New Hampshire, the snow has been about five feet in depth all winter, and they have good sleighing there now. It has been a glorious winter for the loggers. An immense mass of good lumber has been cut near the White Mountains, and is now ready, on the banks of the Saco and its tributaries, to be launched into the streams, when the waters are at their highest point. One firm in North Conway have cut upwards of twelve hundred thousand feet the past winter, to be floated down.

A Hard Bed.

Sir George Staunton visited a man in India who had committed a murder, and in order to save his life, but what was of much more consequence, his caste, he submitted to a penalty imposed; this was, that he should sleep seven years on a bedstead, without any mattress, the whole surface being studded with points of iron, resembling nails, but not so sharp as to penetrate the flesh. Sir George saw him in the fifth year of his probation, and his skin was then like the hide of a rhinoceros, but more callous. At that time, however, he could sleep comfortably on his "bed of thorns," and remarked, that at the expiration of the term of his sentence, he should, most probably, continue that system, from choice, which he had been obliged to adopt from necessity.

The best cure for hard times is to cheat the doctor, by being temperate; the lawyer by keeping out of debt; the demogogue by voting for honest men; and poverty by being industrious.

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New Inventions.

Great Invention for Shooting and Capturing Whales.

Capt. Robert Brown, of New London Conn., has invented a most important improvement for shooting and capturing whales. It is well known that there are some whales found on the coasts of the Pacific that cannot be approached with the harpoon in a boat, and at best the harpooning and lancing of whales is a very dangerous and difficult business, and sometimes on account of the sea, an impossible thing. The idea of firing the harpoon out of a gun prepared for that purpose, has been often advanced, and patents have been secured for the purpose. But the construction of the of the harpoon and the way in which it was attached to the line to be fired off, rendered all former attempts void, for want of accuracy. Capt. Brown has obviated all former difficulties, and his harpoon, with the line attached, can be fired as accurately as a musket ball. The invention is not a theoretical deduction, but has been tried by the hardy and determined Captain, and with great success. He has also made a valuable improvement on the lance, whereby it can be fired out of the same gun which is used for the harpoon, and be directed like the bolt of a Genoa Bow, to strike the monster of the deep in the vital parts. These inventions of Capt. Brown may be termed, "Whaling made successful and easy by a Yankee Captain."

Measures have been taken to secure a patent.

New Sash Supporter.

A substitute for weights and pullies in supporting window sash has been invented and patented by Mr. J. A. Pease, of Philadelphia. The cheapness at which it can be afforded and the manner and ease with which it works, render it a valuable invention ; it is very simple in its construction and admirably answers the purpose for which it is intended. It consists of a metal box with a shaft or roller covered in the centre with india rubber or other elastic substance; the ends of the shaft play in the journals of the box, which is placed in the frame of the window. The bearing of the elastic roller upon the sash holds it in any desired position, and at the same time allows the sash to be moved with ease ; it is not liable to get out of order, and the roller being elastic does not wear the sash, it also keeps the sash from being shaken by the wind. We have no doubt but that it will come into general use, as the saving by its use over the weights and pullies is from one to two dollars per window.

Improvement on Power Looms.

Mr. Thos. T. Wilcox, of Norwich, Mass., has invented an improvement on the manner of operating the picker staffs to box the shuttle, which has been pronounced to be an excellent invention, for two reasons :—First, both of the picker staffs are regulated in their tension to apply a greater or smaller power to the picker staffs by two flat steel springs, which are united together by a small chain working on two centres (one for each spring.) If, then, one spring has a greater tension than the other, as they work on centres, an amount of reaction is communicated to the other spring, thus equalizing the power to work both picker staffs.

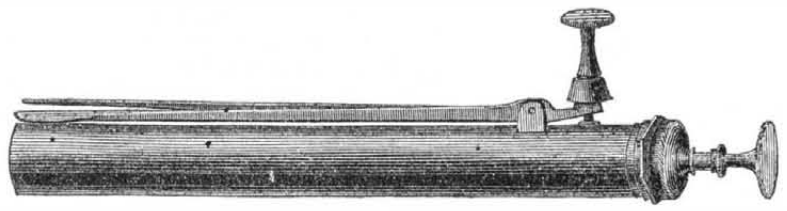
Second,—The springs can be screwed up to any tension to box the shuttle, so as to adapt the power to box the shuttles for different speeds.

It is well known that a free and light, but correct motion is best for operating the shuttles, so as to enable a girl to attend four looms, (if it is coarse work), fairly. At any rate it is not the fastest loom that is the most profitable, but the smoothest working loom at an average speed. There are different opinions, however, about "what is the most profitable speed." Well, this cannot be set down as a rule for all, for that must depend on circumstances—such as the quality of the weft, and the regularity of the whole machinery in *the* factory. But so far as it respects the regulating of the power to operate the shuttles, we consider that Mr. Wilcox's invention is both ingenious and useful, although a little more expensive than the plans at present in use for that purpose. A loom has been run with it at the rate of 200 picks per minute. Measures have been taken to secure a patent.

New Helical Railway and Circular Chariot.

M. Chamery, of Paris, has invented a new kind of railway, which presents some exceedingly novel features, but whether his invention will prove useful or not, is quite another thing. He applies it to the working of mines, to raise materials for building purposes, and for a communication between the upper and lower part of irregular built cities. For mines, &c., this mode of railway communication is effected by means of a helical rail affixed to the interior of a circular pit, and in which a platform is fitted having three wheels at equal distances on the circumference, and at such differences of elevation as will conform to the helical form of the rail, and at the same time preserve the horizontal plane of the platform. A round vertical shaft is placed in the centre of the pit, and passes through the centre platform, and revolves in a suitable step at the bottom. This shaft extends upward to a considerable distance, and is operated by spur gearing, which, by revolving the central shaft, carries up the platform which is adapted to receive carriages, winding them up on the augur principle. The railway being a circular inclined plane, the carriages on the platform descend gradually by their own gravity. Arrangements are made to let the carriages out of the pit and down into it, and stop and set the machinery in motion at any moment.

DR. CAULKIN'S INTRA VAGINAL SUPPORTER.---Fig. 1.

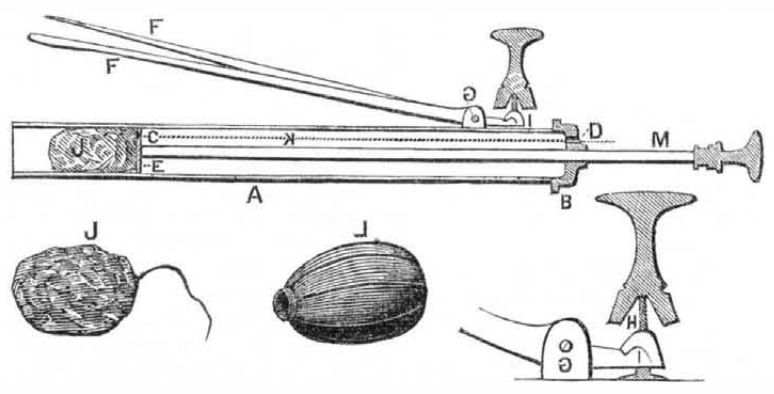


This excellent instrument is the invention of Dr. Russell Caulkins, of Sandusky City, Ohio, and was secured to him by letters patent on the twenty-ninth day of last January. Its fitness to the replacing of the Uterus and Vagina in all cases of Prolapsus Uteri and Vagina, without secondary aid, the afflicted person being perfectly capable by it of self-assistance.

Fig. 1 is a perspective view. Fig. 2 is a section with the elevators raised, and below the instrument is a capsule, L, (letter wrong way), a piece of sponge, J, and H is a detached section of a part of the tube, with the elevating screw and part of the fingers.

A is the tube; B is the cap which screws on to the top of the tube, to be easily put on and taken off. E is the plunger ; D is a hole to allow the cord, K, to pass up from the sponge, J, through the plunger at C. M is the plunger rod ; S is a screw for the purpose of elevating, and at the same time extending the elevators, F F. These elevators work on a pin, G, which passes through bearings made on the tube. The backs of the elevators are made with a small knob each, at the end. The screw, S, enters into a hole in the tube, A, which has a corresponding thread to receive it, and there is a conical groove in the nut, which, as it works down on the shoulder, I, of the elevators, spreads them apart, and at the same time elevates them. They are now shown as elevated for clearer representation. The capsule is made of smooth india rubber, and covers the lower end of the instrument, and when

Figure 2.



used, the sponge is forced down into it, the elevators raised, and the instrument withdrawn, when the capsule forms with the sponge inside, as represented by L, and is retained in its situation for some time, when it can be withdrawn by the cord of the sponge.

It is well known that those who are afflicted with the weakness mentioned above, hitherto, have had great difficulty in receiving permanent relief. This instrument affords an easy remedy and permanent, as many are willing to give their testimony to the benefits derived by them from its use. Its application is easy, and in no case of its application, has it been unsuccessful. It is our opinion that this invention will secure to the doctor, the lasting gratitude of the female sex especially. Those who wish to make inquiries about the sale of patent rights, can do so by letter (*p. p.*) addressed to Sandusky. The instruments are for sale by Mr. Frederick Leise, No. 22 Cliff st., this city, (N. Y.)

New Rail Road Invention.—Self-Acting Coupling.

Mr. David S. Neal, an ingenious blacksmith of Lynn, has invented what he terms a Self-Connecting shackle, for railroad cars, for which he has taken out a patent. It is so arranged that when two cars are pushed together they are immediately connected, without the necessity of any persons going between them.—[Ex.

[There are quite a number of "Self-Acting Couplings" in the world ; the question is, "which is the best ?" Mr. J. S. Graves of Springfield, Mass., has invented a self-acting coupling in combination with the old safe link and pin. None of our railroad companies like to give up the old link and pin coupling, on account of certain safety. Mr. Graves combines the link and pin to operate by a self-acting cam, to make the pin couple with the link, when one car is pushed towards another, and then the link of one enters the coupling-box of the other. The arrangement is a simple, safe, and certain self-acting coupling.—

Measures have been taken to secure a patent.

Steam Wagon.

The committee appointed by the citizens of Houston Texas, to examine and report upon the "principles and practibility of a steam wagon or locomotive engine, projected by Captain William Wood," have reported that they believe such a machine well adapted to the wants of this country, that a very small expense would put the roads in good condition to receive it; after which, from its construction, it would soon so consolidate and improve them as to render little expense necessary to keep them in repair.

More about the Stereotype Process. said to be Discovered in Paris.

Galignani thus describes the process :—In the ordinary process of stereotyping several hours are required, for the material used for receiving the impression of the type, and which serves as the mould in which the stereotope is cast, must be carefully and slowly dried. The mould for the stereotype by this new process is made of a few sheets of tissue paper, with a couple of sheets of common paper at back to give a certain degree of strength. The paper is wetted to the proper degree, and then pressed upon the type. The impression is perfect. The mould is then dried, which is the work only of a few minutes, and placed on a cylinder, with a sufficient space between it and an outer case to receive the metal. This metal which is very liquid, and which is prepared in a pecular way, flows rapidly and evenly over every part of the mould, and by the application of a cold wet sponge to the exterior, it becomes almost instantly solid. The mould is then removed and transferred to the cylinder of the machine ready for printing. The whole of the stereotyping does not occupy more than from fifteen to twenty-five minutes.

An Extraordinary Invention.

Dr. Alexandre, from Paris, the inventor of the artificial leech, has lately brought out another invention, a sub-marine boat, in which a company of persons can go down to the bottom, have communication with the ground, performing any sort of work by digging or otherwise, and return to the surface at will. This is the very thing for finding the gold at the bottom of the streams in California.—[Exchange.

[This paragraph has gone the rounds of quite a number of our exchanges and we must put "the saddle on the right horse." to use a common term. Robert Fulton employed a torpedo boat like the above, in 1802, and exhibited it on the Seine. The Earl of Stanhope, also, invented one at the same time. Fulton's Torpedo was to destroy the British fleet, and Stanhope's Torpedo was to destroy Fulton's.

Consumption of Smoke.

A firm is Cincinnati has offered a prize of $500 for an apparatus by which the smoke from the fires in their manufactory will be consumed, and they offer the use of their boilers, chimney, and their premises generally, for the purpose of reasonable experiment. The difficulty is that smoke cannot be consumed; or any part of it except the wasted, volatilised portion of fuel, which badly managed fires in ill constructed furnaces throw away.

[The above is from an exchange. We cannot tell what firm has offered the above reward for the consumption of smoke, but we would like to know for the benefit of our readers.

American Cloth in France.

The French Minister of Commerce recently caused a specimen of cotton cloth, manufactured in the United States, to be exhibited in one of the rooms of the Bourse. It has been examined by several of the principal manufacturers from Rouen and Alsace, and they declared that, judging from the specimen, the American manufacturers have made great progress, and that they may become formidable rivals to them in the production of low-priced coarse articles, but that they are greatly inferior in point of taste in the pattern and durability of color, but they are produced much cheaper.

Maury's Wind and Current Charts.

Extract of a letter from Capt. Coupe, of the Rochester, dated Rio de Janeiro, February 1850.

"I take pleasure in forwarding my abstract to inform you that I came well to the westward, (Maury's route,) and made a very fair passage, considering the vessel I am in. I have beaten all the vessels that made an easterly passage, (old route.) Some I have beaten twenty and thirty days."

Quick Telegraph Work

We received a dispatch from New York this morning, over Morse's telegraph, consisting of nearly 1200 words, which was transmitted entire in the remarkable short space of twenty minutes.—[Boston Bee.

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Scientific American

NEW YORK, APRIL 27, 1850.

American Machinery.—Matteawan.

Availing ourselves of the facilities now afforded by the New York and Hudson Railroad for travel, we, a few days ago, visited Matteawan for the first time—a place long and favorably known to us for the excellent work produced there. Mattewan is a snug little village embosomed in the Highlands, about one mile from the Hudson river, and sixty above New York City. Rising above and around it, the stern and grand mountains send down their silvery waters, which form a beautiful and an abundant stream to propel the vast machinery which sends up its busy hum from hammer, wheel, loom and spindle. The most surprising thing about it, is the great amount of good work produced in such a retired nook of this State. Crossing the bridge and entering the counting room, we were soon escorted to the machine shop by the gentlemanly Superintendant, Mr. Charles E. Leonard, author of the "Mechanical Principia," a work *unique* of its kind, valuable to the manufacturer and mechanic, and which we have with much pleasure frequently noticed. In looking upon the brown walls of a machine shop, and listening to the thunderings of its hammers, we are too ready to place the mechanic arts as something undignified and degrading as a profession. Reader, if ever you have such feelings, go to Matteawan to be cured of them. When you enter the machine shop, you will understand the reason why the Greeks, with their fine imagination, wedded Venus the beautiful to Vulcan of the hammer and the dusky brow. We always feel an unutterable pleasure in looking upon the operations of fine machinery, and viewing the mechanic at his various branches of business. The Matteawan Company, employ about four hundred mechanics. The machine shop is one of the most complete in the country, and its several departments are well arranged to produce in the most perfect manner, every part of a cotton mill, from the water wheel or steam engine, to the card, spindle and loom. In the engine shop there were six large engines in various stages towards completion. One was a double condensing engine, capable of working 150 horse power, for a new cotton factory in Mobile, Ala. The machinery for this factory (200 looms, &c.) was also in the course of construction. There was also one double condensing engine of 100 horse power with appropriate machinery (4,000 spindles, &c.) for a new cotton factory in Greensboro, Geo. We also saw machinery in the course of construction for three factories in Tennessee, to be driven by water power. This shows what our Southern friends are doing in the way of manufacturing. It is the custom of the Matteawan Co. to furnish drawings and plans of factories with all the necessary machinery. Those who are about starting factories receive all the information they want, which enables the stockholder to be posted up on all the business before him. All the working plans are given and thus, those who desire to enter upon the business of manufacturing need not be ignorant of the expense.

During the past year this company has built 63 engines, averaging 100 horse power each. These have been built for different parts of our country, and other countries. One splendid engine of 125 horse power is now on hand, for a large flouring mill in Havana, Cuba. They have furnished a number of locomotives for the Hudson River Railroad. These engines compare well with the best. One, on a trial trip of 150 miles, with a heavy train, ran at the rate of 40 miles per hour, with the average consumption of only 3½ cords of wood.

There is a cotton factory belonging to the Company, under Mr. Carver, and near it, driven by a chain belt running over the high road, is the card room, where a number of beautiful automaton card machines are continually in operation. Almost every kind of machinery is made here—ship hawsers, files, harness for looms, and every thing (to use a common but pithy expression) "from a needle to an anchor." America now enjoys a most excellent and world-wide reputation for making good machinery. Of this we have abundant testimony. We know a gentleman, himself an Englishman, who refused a good offer of the Agency for a new cotton factory, because a number of the machines were to be of English make. His reason was, "he could not produce the quantity nor quality of work from them that he could from American machinery, and what would be expected from him, in a new factory of the present day." We admit that England can produce the very first quality of cotton machinery, but the machinery which she makes for foreign export is made for the *market*.

Our home machine shops had reputations to make—nobly have they made them,—and now they have to sustain them, and they will do it against the world. But so far as it regards manufactures——the North must commence to make finer goods, and put up finer machinery. We have alluded to this more than once before, and the great amount of machinery in the course of construction at Matteawan, for the manufacture of Southern goods, prompts us to throw out this hint again. If our northern manufacturers pay no attention to it, they will, we are confident, regret it, for the South is capable of making coarse goods, at any rate, cheaper than we can at the North.

Matteawan is a manufacturing "*bee hive*," whose presiding genius is Wm. B. Leonard, Esq., 66 Beaver street, New York, who is general agent of the Company. The establishment is conducted on Temperance principles, and the good effect of this plan is, that most of the workmen occupy their own houses—neat white dwellings, with gardens attached to them. Their interests, therefore, are identified with the prosperity of those of the Company, and the Company understands its true interests, also, in employing such intelligent and steady mechanics as we saw there.

Mechanics' Institute School.

The Eleventh Annual Exhibition of the school belonging to the Mechanics' Institute of this city, took place in the Tabernacle on the evening of the 16th, last week. The building was densely crowded by a delighted audience. The Mayor and a number of prominent advocates of Education, were present. The pupils, to the number of several hundreds, were ranged on the platform, the boys on the right, and the girls, dressed in white, on the left side, and presented a very handsome appearance. The exercises, which consisted of songs, recitations, and dialegues, were admirably performed, and reflected great credit on the energy and skill of the teachers. The Mayor delivered an able and eloquent address. About one hundred rewards of the right sort, good substantial books, were distributed. The exhibition did great honor to the teachers and was an honor to our city. The Mechanics' Institute has been in existence from 1833 as a Chartered Association. It was organized with the object in view of spreading abroad by lectures and a good Library, a profound knowledge of the physical sciences among the Mechanics, and to educate their children. The school was founded in 1839, and has been more successful than any other department of the Institute. The library and rooms of this Institute, are in 105 Bowery, since they were removed from the City Hall. During the winter season some excellent lectures on various subjects, were delivered, and upon the whole its prospects are more flattening than they have been during some past years. The mechanics of our city do not estimate truly, the value of this institution. It should have 10,000 members. This would make it the finest Institution in the world, and this could all be done, if a right spirit was manifested among thoso who should esteem it as belonging to their honor, to labor for its prosperity. We hope to see a goodly accession of new members during the present year.

Telegraph to the Pacific.

Mr. O'Reilly is now on his way West, for the purpose of immediately commencing a section of the Mississippi and Pacific telegraph. Preparations have been made to run up the line at once as far as Fort Leavenworth, on the Western border of Missouri. This will connect the East with the fartherst bounds of civillzation West. Mr. O'Reilly hopes to reach California by July of next year.

Great Movement among the Working Classes in New York.

At the present moment there is a universal move among all the working classes in this city for an improvement in their wages, and many of them for a judicious reduction of the hours of labor. It is one of the most extraordinary movements on record. The dry goods clerks, the bakers, shoemakers, carpenters, painters, carvers, coach makers, blacksmiths, wheelwrights, window shade makers, printers, cutlers, and, in short, about every other branch of the mechanic interest, are, each in their turn, having meetings, night after night, to discuss and deliberate upon the best plan to improve their condition. As their proceedings are conducted with dignity and decorum, and with respect toward their employers; it is no wonder that those employers in most cases have complied with the demand for an increase of wages. There are no threats of forcible "strikes," nor is any thing done to compromise in the least, the friendly relations that should always exfst between the employer and the employed.

There have been a number of strikes and portions of some trades are now out, but all the movements have been soberly and quietly conducted. Considering the great increase of rents, &c., in our city, it is positively necessary that the wages of the working people should be raised. No city in the world contains so many miserable houses at such high rents—in fact mechanics have to crowd upon one another in ill-ventilated apartments, or else they cannot live at all. The reason of high rents has not been owing to the price in building materials, nor in recent speculations, but in the price of ground upon which to build.

Street Paving.

New York is an experimental city in the line of street paving. A part of Broadway is now being paved upon a new system, and is no doubt good in one sense, but an expensive and not a very good one, in our opinion, in another sense. The plan is to excavate to the depth of about two feet and lay a tier of coarse flag-stone of about 2 feet by 3. The seams are filled with hot pitch and covered with gravel, and above this a layer of broken *road metal*, is laid smoothly and the whole over-topped with large granite blocks about the size used for the Russ pavement.

There can be no question about the enduring qualities of this pavement. It is well planned to last for a long time, but we don't like the large top blocks. When they are worn smooth, then we shall hear of troubles. Neither is it good for lifting to reach gas and water pipes. If the top blocks were only about one half as large, they would answer a better purpose, and with a good firm foundation we see no reason why smaller blocks cannot and should not be used for the top tier.

Tin Plate Manufacturing.

Mr, T. Butler, in a letter in the Philadelphia Ledger urges upon our iron mannfacturers, whose rolling mills are stopped to go into the making of tin plate. He says that it can be made far cheaper in this country than in England (but we doubt it) as our wood is so cheap. He says we import $3,000,000 of tin plate annually, and that we have a vein of tin in the States five times the thickness of any worked to profit in Britain. [Where is it?]

He says: "To be successful, it would be necessary to adopt all the advantages a course of years has introduced into the trade in Britain, the most prominent of which is the uniting with the works the distillation of wood, apparatus for which I have at an intended iron work in Nova Scotia, as well as at a work carried on by my son in Wales, which I engaged in, with the view of removing, when perfected in form and working, to the States."

We would say that there is a chemical work at North Adams, Mass., for distilling wood and making iron liquor for dyers and printers, and pyroligneous acid for the same branches of business. There may be other works in the country not known to us.

Notice to Inventors and Patent Agents.

The Commissioner of Patents has issued a circular changing the mode of procedure in receiving applications for Patents, and fees and papers for Caveats. The fees and all the papers must now be forwarded at once and together to the Patent Office. "All the papers and fee in each application must be filed in the Patent Office at the same time." If, after this, papers and fees are forwarded to the Patent Office at different intervals, the Office will not acknowledge the receipt of the same, nor hold itself responsible for any errors that may arise from such irregular proceedings. This new mode of action is adopted to prevent trouble and mistakes in the Patent Office, as the business is greatly increased, and many have sent the fees and papers, at long intervals of time from one another, causing great trouble in searching the books of entry to arrange all things for examination. Remember—fees and all papers and models should be sent together hereafter.

Telegraph Suit.

The application for an injunction against House's Telegraph, which was to be argued before the Circuit Court of Boston, two weeks ago, was not proceeded with—the complainant declined proceeding; Geo. W. Gifford, of this city, went to Boston as one of the counsel on behalf of Mr. House.

It is very unjust for a patentee to apply for an injunction against another, and then withdraw the application. Why? Because the defendant is put to a great deal of expense in preparation to meet the case. The complainant, in such cases, is only playing the part of a trickster to lead his opponent into expense. This surely is neither right nor honorable. The same kind of trick was played upon Bain, last fall, before Judge Munroe, in Kentucky. If House or Bain's Telegraphs are infringements on Prof. Morse's Patent, let there be a fair and honest trial, at common law, to settle the question. This is the most upright and manful way of proceeding to determine the matter.

Georgia Burr Versus French Burr Stones.

The Schooner Hartford arrived at this port a few days since from Savannah with a lot of 5½ feet Georgia burr mill stones, to be used in the mills of Hackshall, Bro. & Co., at Richmond City, Va. It may somewhat astonish importers of the French burr to learn the fact, that the South will not only in future quarry their own mill stones, but it will not be a year hence before they will be furnished for all new flouring mills that may be erected in this or the Western States. The Georgia stone, we have been informed by a manufacturer of this city, fully equals the best French; and he says, although he is engaged in the importation of the French burr, that the Georgia stone will inevitably take the place of the French in this country—"*Sic transit Gloria Franciæ.*"

Percussion Cap Machine.—Eratta.

In the article last week from Mr. Bouton, respecting his invention of improvements of machinery for making percussion caps, and to which allusion is made this week by our Washington correspondent, we would say that there are two typographical errors in it, which obscures the sense considerably. In the 11th and 12th lines the word "*infringements*" should read "*improvements;*" and in the 2nd paragraph, 8th and 9th lines, the word "*improvements*" should read "*infringements.*"—Those who will read the article can easily correct the sense of it by this notice. How the words were transposed is a marvel to us.

Camphene.

A serious fire took place at a camphene distillery, in our city, on last Friday, by which several of the hands were severely burned. There is scarcely a week passes over our heads without a number of accidents from the use of camphene. Great care should be exercised in the use of it.

Fusible Boiler Plug.

The Committee on Manufactures, in the Massachusetts House of Representatives, have reported a Bill forbidding any person or corporation from using a steam boiler without a fusible plug, under the penalty of a thousand dollars.

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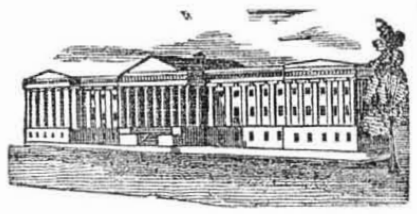

LIST OF PATENTS CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending April 16, 1850.

To J. Ashborn, of Walcotville, Conn., for improvement in guitar heads and capo d'astra.

What I claim is the method of tuning Guitars by combining the strings each on a spindle, having a part below the guitar head of an enlarged diameter, connected and combined with a peg of the usual construction, by means of a cord, in the manner and for the purpose substantially as described.

I also claim combining an eccentric roller, a capo d'astra forming and holding it down on to any desired part of a guitar handle, by means of a metal strap made to embrace the handle and capo d'astra plate and attached thereto, substantially in the manner and for the purpose specified.

To H. Baldwin, of Nashville, N. H., for improvement in Car Couplings.

What I claim is the combination of the draw iron, with the bearing, bolt, bed piece and the wedge or key, in such manner that the draw iron makes a vertical joint with the bearing, and through the bearing makes a horizontal joint with the bolt and the bed piece, and through the wedge or key all these joints are brought to any desirable rigidity of bearing.

I claim this particular combination of the parts described, whereby a free, but close horizontal and vertical joint is at all times maintained between the bodies to which it is attached, and especially the applications of couplings upon this construction, to the connection of locomotive engines and tenders.

To C. Bauchman, of North Whitehall, Pa., for improvement in machines for breaking hides.

What I claim is the breaking of hides, the working out of the lime and the bate and the scouring of the tanned hides by means of revolving cylinders and beaters, substantially as herein set forth.

To James Boon, of Lancaster, Pa., for improvement in cast iron car-wheels.

What I claim is the casting a "chilled railroad cast iron car wheel, giving a uniform chill to the wheel, by separating the arms from the rim of the wheel, by the inverted flanges, forming a hollow rim, together with the combination of the arches or ovals, as herein described; thus using the solid hub to the chilled wheel, adding strength to the whole, and securing regularity in the wear.

To R. Cook, of Saratoga Springs, N. Y., for improvement in Hydraulic Blowers for Furnaces, &c.

What I claim is the combination of the cavities or air cells, formed in part by the partitions on the periphery of the drum of the wheel or receiver of compressed air, with said drum or receiver, the exterior floating valves, the interior valves, and the hollow shaft, all forming parts of, or connected with a wheel, to be turned when partially immersed in water, for the purpose of producing a blast of air through the hollow shaft, to be used in heating, smelting and other manufacturing and mechanical operations. [See an engraving of this machine in No. 24.]

To J. T. Davy, of Troy, N. Y., for improvement in grates for cooking stoves.

Having thus described the nature of my invention, what I claim is the manner herein described, of arranging and combining the fire grate of cooking stoves, with the front fire-plate and curve plate, so that it shall retain its proper position for retaining the fuel in the chamber by its own weight, and shall be raised for removing coals and ashes, substantially in the manner and for the purpose herein described and represented.

To Willard Day, of Brooklyn, N. Y., for improvement in Sub-marine Telescopes.

I claim, first, the main tube, constructed with the side opening in it, to allow a spy glass to be used in combination with the telescope, as herein set forth.

Second, The mirror chamber constructed to allow the mirror to move through a space of about ninety degrees, and with a glass in the bottom of it, in the manner herein described and set forth.

Third, I claim the arrangement of the lamps or artificial lights on each side of the mirror, and leading the feeding draft from the main tube to the lamps, and carrying the smoke away through the separate passage, in the manner herein described, or in any other manner substantially the same. [See an engraving of the apparatus in No. 4 this Vol. Sci. Am.]

To C. M. Ferris, of New Milford, Conn., & Nathan Swan, of Paterson, N. J., for improvement in preparing clay for brick-machines.

What we claim is the method of constructing the grinding apparatus or mill; in such a way that the knives on the shaft, shall be set so as to describe a spiral line at their junction with the shaft; in order that no two of them shall be able to pass between any two pairs in the curb, at the same instant and under the same circumstances. It being understood that we do not claim in general this mode of setting the knives on the shaft, but only the use of the same, in connection with the fixed knives in the curb, for the purpose specified.

To J. H. Lillie, of Joliet, Ill., for improvement in Electro-magnetic Engines.

I claim, first, the employment of induced electricity, as above stated, in producing magnetism in the secondary electro magnets, to be used as a motive power, in connection with the prime mover, and to neutralize the secondary currents of the principal magnets formed by the direct current from the battery.

I claim the combination of the magnet changer and pole changer, substantially as set forth.

To J. B. Fuller & G. W. Pierce, of Worcester, Mass., for trap for catching Flies.

We claim the application of the devices for conveying flies into a box or vessel by wheels or belts between floats or projections, moving either by a circular or straigtforward motion, in the manner and for the purpose herein specified.

To T. Harvey, of Baltimore, Md., for combined shutter and sash fastener.

I claim the lever secured by a fulcrum pivot to the sill of a window frame, when it is so arranged that the hook at its outer end can be made to interlock with the holder made fast to the blind, and when in that position the inner end of the lever be so connected with the apparatus for fastening down the sash, that the lever cannot be operated without previously unfastening the sash, substantially as herein set forth.

Second, I also claim the arrangement of the lever placed upon the window sill, the holder secured to the blind, and the latch secured to the lower bar of the sash, by which, when the blind is closed and the window sash is raised, the descent of the sash will operate the lever and thereby securely fasten the blind, substantially as herein set forth.

Third, I also claim the arrangement of the lever, the holder, the latch, and spring catch, (respectively secured to the sill of the window frame and to the blind and sash) in such manner that the closing of the sash will securely fasten it down, and at the same time operate and firmly retain the lever in such a position that it cannot be detached from its hold upon the blind, without previously unfastening and raising the sash, substantially as herein set forth.

To E. Ripley, of Troy, N. Y., for improvement in the construction of bases for stands.

What I claim is the mode herein described of employing a base piece that the legs or feet may hook into, and be held firmly in place by the cap plate, and rod running through the centre, the same being constructed and operating substantially in the manner and for the purpose described and represented.

To J. Ruck, of New York, N. Y., for improvement in Pianoforte action.

First, I claim the spring tongue in combination with the under angular lever, for the purpose set forth, not limiting myself to the exact construction of it as herein described, while the same effects by a like combination may be produced.

Second, I claim the regulating screw for the purpose set forth, viz., to regulate the strike key separately, as set forth.

To M. & S. S. Sage, of Windsor, N. Y., for improvement in attachment of harrow to Seed Planter.

What we claim is connecting with the machine a harrow, constructed with spring teeth, so arranged by means of a slide hinge that the wheel track towards the land to be sowed can always be left undisturbed as an accurate guide in returning across the field.

To A. Sandoe, of Mifflingtown, Pa., for improvement in Gearing of Seed Planters.

What I claim as new and for which I desire to secure by Letters Patent, is, first, the sliding frame in combination with the rod, for the purpose of raising and depressing the drills, and also for stopping the feeding simultaneously as above set forth.

Second, I do not claim the simultaneous throwing out of and into action the feed roller and its respective drills, nor the slide or shut off: but what I claim is operating the shut-off and lever, by means of the arm, as set forth, for the purpose of causing the same to be self-acting, either when coming in contact with any obstruction, or when desired for sowing pointed or irregular lands.

To A. B. Seymour, of New York, N. Y., for compound Tubular Rail.

What I claim is the making of a two part break joint hollow rail, substantially as herein described; and in combination with the two-part rail made hollow as specified, I claim the blocks, inserted in such hollow, at the junctions of the sections, substantially as described.

To D. M. Smith, of Springfield, Vt. (Assignor to T. Chadbourne, of Concord, N. H., for improvement in Sewing Machines.

What I claim is the herein described disposition of the thread eye of the needle, (that is to say the said eye being placed near the point of the needle,) in combination with the afore described manner of supporting the needle, and applying it to the machinery which produces the corrugations or foldings of the cloth, not meaning to lay claim to the combination of a needle and gears, or other analogous contrivances for producing sewing, as the same have heretofore been applied and used, but meaning only to claim my improvement as constructed, and made to operate substantially as above specified.

DESIGNS.

To J. D. Green & G. Warren, of Troy, N. Y., for design for cooking stoves.

Plank Roads.

Mr. Geddes an engineer gives the following account of the Salina road:

The road is of hemlock plank, four inches thick and eight feet long, laid on four-inch sills. The earth was broken up fine, the sills bedded into it, the surface graded smooth and firm, and planks laid on the sills, care being taken that the earth is up to and touches the plank at every point. This is very important, for, if any space be left underneath for air, dry rot ensues. We did not let out to contractors the construction of the road, for the reason that we were desirous of securing the bedding of the timber perfectly, a thing that my observations in Canada convinced me was not always done when the work was done by the rod.

By doing our work by the day, we not only secured a perfect construction in this particular, but we saved some thousands of dollars in the cost. If you make a plank road, I advise you, by all means, to do the work by the day, and to put at the head of the buisness a man competent to engineer and direct the whole business. A variation of a few inches in the line of the road may tell largely in the cost. The estimated cost per mile for a single track, eight feet wide, is $1,500.

Biology at Fault.

Prof. Fiske, the biologist, recently got himself in a snarl at New Orleans. He said he could make a man dead drunk sober immediately, which was tested by one of his unbelieving auditors carrying before him a subject in that situation for trial. The professor backed out, very clearly indicating that the whole science is a humbug; which, if practised there, as it was here, we think no sound thinking man can doubt.

Disastrous and Singular Explosion.

One day last week at the Foundry of Bird & Weld, South Trenton, New Jersey, while the workmen were pouring melted iron in the mould of a large wheel, the hot iron came in contact with some iron in the mould which had become wet, steam was generated to such an extent as to raise the flask, which had about two and a half tons of pig iron on it, some three or four inches; the flask sunk immediately, and in an instant it was again raised, and the hot iron was thrown all around the building with such violence as to imbed itself in the woodwork, and adhere closely to the stove and iron pillars in the foundry. The crane and some other of the woodwork was set on fire, but it was speedly extinguished. But worst of all, two young men, Wm. Allibone and James A. Cooper, had their legs very severely burned. One of them was in a corner of the foundry, near the mould, and a stream of the melted iron played against his legs, forcing itself through his pantaloons down into his boot, which was almost half filled, and when the boot was removed, the iron was cold. The other received almost as much injury. Such are some of the effects of steam.

The Paris Academy of Sciences.

The work of Maude, on Microscopic Anatomy, is declared to be of the highest importance and value. A like tribute is paid to Dr. Labdouzy's copious work on Hysteria, founded on 362 observations or cases, reported by himself, and 62 other practitioners and authors of different ages and countries. A prize of 1500 francs was awarded to Dr. Bonchut, for his memoir on the question of apparent death, and the means of preventing or remedying the frequent formidable consequences. The Academy offer a prize of six thousand francs for this thesis—"To ascertain, by precise experiments, quantities of heat disengaged in Chemical combinations;" and the same sum, to be awarded in 1858, for the best work or memoir on the most advantageous employment of steam for the speed of ships, and on the structure, equipment, stowage and arming which should be preferred for this class of vessels.

Preserving Gathered Flowers.

For the benefit of our lady readers, we copy from an Eastern paper, the following recipe for preserving the beauty of gathered flowers:

"Procure a flat dish of porcelain, into which pour water; place upon it a vase of flowers, and over the vase a bell glass, with its rim in the water. The air that surrounds the flowers being confined beneath that bell glass, is constantly moist with water, that rises into it in the form of vapor. As fast as the water becomes condensed it runs down the side of the bell glass into the dish; and if means be taken to enclose the water on the outside of the bell glass, so as to prevent it evaporating into the air of the sitting room, the atmosphere around the flowers is continually damp. The plan is designated the "Hopean Apparatus." The experiment may be tried on a small scale by inverting a tumbler over a rose bud in a saucer of water."

Singular Discovery.

There has lately been dug up, some fourteen feet below the surface of the earth, and more than fifty feet above high water market, in the garden of Capt. G. W. Cutter, the residence of Mrs. Cutter, formely Mrs. A. Drake, an elephant's tusk, which time and the action of the elements have reduced to a substance resembling chalk; it crumbled when taken out of the earth; but a portion of it entire, more than twenty inches long is in the possession of the proprietor of this place, just above the mouth of Licking opposite. The whole animal is in the bank. If this proves to be a real elephant's tusk, which every evidence now tends to do, it will prove a singular Zoological fact, that elephants did once belong to this country.—[Cin. Gaz.

[The above is evidence of the great number of *singular discoveries* which are based upon suppositions.

Salt Mine Discovered.

A salt mine has been discovered near Woodstock, Lower Canada. It is said the mine will yield sufficient to supply the whole of Western Canada.

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TO CORRESPONDENTS.

"G. K., of Pa."—Mr. G. cannot have any patent on the wheel you describe. The conducting of the water is claimed in Parker's patent and belongs to his invention, not Mr. G.'s.

"J. D. R., of Phila."—The first telegraph wires were encased in glass tubes, but failed to acoomplish the object you speak of, especially when laid in moist ground.

"R. L. P., of N. H."—We shall assuredly let you know if the Government offers a reward; but you are too hasty in your conclusions, to condemn what you are not acquainted with, for the composition stated has answered the purpose, and stood for more than twenty years. The numbers we do not want, but if we hear of any body that does we will let them know.

"P. D. B., of Ill.—We cannot give an opinion on your machine without a drawing, which you had better send. Machines for this purpose are numerous, but yours may be different from all others.

"H. R.. of Canada."—Your advertisement was too long for our columns, and we were obliged to cut it down as you will notice.

"M. N., of Mass."—We do not suppose that any such attempt would meet with favor from Congress. In fact it has nothing to recommend it.

"J. H., of Texas."—So far as we are able to judge of your invention from the description, it appears to involve some novel points. With a view to obtaining a more correct opinion, we advise you to construct and forward a small model, it will be required at the Patent Office in case you should conclude to make an application for a Patent.

"A. D. B., of Geo."—Your engraving is nearly complete, and the circulars will be attended to at once. We wrote you on the same day that yours was received.

"L. S. S., of Me."—Your model has been received, and examined. The combination that you claim is entirely new to us, and we have no doubt but a patent could be secured for it.

"A. B., of Geo."—Your letter enclosing $5 reached us safe, will you please inform us how we shall forward the bound Vol. as it cannot be transmitted through the mail.

"H. T. P., of S. C."—We have writen to the parties in regard to the lathe, and shall write you as soon as we hear.

"H. M., of Vt."—We cannot give you any additional information in regard to the light. It is not yet before the public.

"J. A.P., of Conn."—The machine you refer to would not be so suitable for stone as it would for copper. We have no number containing a description of it. $5 received and the first 4 parts of Duggan's work sent.

"J. C. H., of Miss."—Yours of the 4th came safe. The $5 has been placed to your credit. We wrote you some time since in regard to it.

"O. B. J., of N. Y."—Your model has been examined and found to possess nothing new or patentable. The combination for pressing is an old device, and the crane is too well known to require reference. You had better not apply—this is our opinion.

"M. McH., of N. Y."—We are giving yours about the driller attention.

"S. S., of Ala."—Your driving apparatus has some new features, such as merely to use a hood for the driver, but submarine armor has been invented, whereby the diver inhaled air by one flexible tube from the top, and exhaled by another. See Brande's Encyclopædia, also Ree's and Crabb's Scientific Dictionary.

N. B., of Mo.; S. P. G., of Mass.; A. McK., of N. Y.; A. W. P., of O., and R. B., of Ct.—Your specifications and drawings have been forwarded to the Patent Office, and the fees paid.

Money received on account of Patent Office business, since April 17, 1850:—

S. P. G., of Mass., $30: M. McK., of N. Y., $20; Capt. R. B., of Conn., $40; D. S. N., of Vt., $50; and C. & D., of Mass., $20.

We have some *strange* communications which we will answer next week.

Inventors Look to Your Own Interests.

It is for the interest of every Inventor whether rich, or in limited circumstances, to have his inventions published in the Scientific American. The circulation of this paper exceeds that of the combined publications of its kind published in the United States, and it possesses advantages unequalled by any other publication in the world, for desseminating scientific and mechanical information. The expense to an inventor of having engravings executed of his invention, and published in the Scientific American, is but trifling, compared with the vast benefit he derives from having his invention appear in the only standard weekly mechanical publication in this country. All the engravings which appear in this paper are orginal, therefore all who chance to see the work (and that number is not less than 30,000 weekly) are assured in studying the descriptions of a machine which is illustrated in it, that they are beholding something entirely new and which has not appeared in any other publication.

The Scientific American is the only weekly publication of any kind which strictly adheres to publishing none but original engravings, therefore cuts, and descriptions of machines which appear in its columns are ever referred to as being the latest and most improved inventions.

Instances of valuable inventions being sold for many thousand dollars might be cited, and the cause of the sale traced to the purchaser having seen a description of the machine published in the Scientific American.—Inventors! look to your own interests.

Back Volumes Scientific American.

We are no longer able to supply back Volumes of the Scientific American, *complete*, of 1, 2, 3 and 4. Our readers will please bear this in mind. Of Vols. 3 and 4 we can furnish sets of about 40 numbers each (not consecutive,) for one dollar per set; of Vols. 2 and 3, sets of about 50 Nos. (containing both Vols.) at the same price (one dollar). We have parcels done up ready for mailing of all the different Vols. referred to above, and on receipt of $1, either of the sets ordered will be immedially forwarded by mail.

Notice

Whenever any of our friends order numbers they have missed—we shall always send them, if we have them on hand. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

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Treatise on Marine and Naval Architecture,—published monthly, 12 Nos., each - -	,75
Leonard's Mechanical Principia, - - -	1,50
Mahan's Civil Engineering, - - - - -	3,00
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JOSEPH P. PIRSSON, Civil Engineer,
20tf Office 5 Wall street, New York.

VENTILATION.—The Subscriber being desirous of making arrangements for the extension of a system of Ventilation, for which he has lately obtained Patents in the United States and Canada, as widely as possible, would be glad to hear of persons in the United States who would undertake its management in such sections and localities as might be agreed upon, especially New York and Boston. The whole operation is natural or spontaneous, and whilst it thoroughly ventilates it also, by the same operation in cold weather, warms the building to which it is applied—floors and all—and with an economy in fuel, (the quantity of external air kept in circulation considered) far beyond any other means in use. It may be applied to buildings already erected, and cheaper than the present pernicious hot-air system, but if a good dwelling house be erected for the purpose, it can be applied to such building for a sum in many cases less than the estimate would be for furnishing it in the usual manner, without the ventilation. The subscriber wants no money down, but is willing to alienate his right for a trifling reservation upon each building ventilated. Letters post-paid to the lines will receive immediate attention until the first of June next. H. RUTTAN.
Coburg, Canada West, 8th April, 1850. 32

THE AMERICAN UNION—The most carefully written and best arranged Paper in the United States. This Popular Paper is supplied with Selected Stories Humorous Sketches, Tales of Travel; Romances, Sketches of Real Life, Biographies, Poetry Serious Sentimential, and Humorous; Gems from New Works, Local Matters, Reviews Agricultural Treasuries, Scientific Novelties, Anecdotes, Glimpses of the Law, Opinions, Correspondence, Foreign and Domestic News, Congressional and Legislative Intelligence, Accidents and Casualties, Financial Articles, Markets, Miscellaneous Editorial Articles, amusing sketches, facts and fancies, such as never before has been in one publication. As a General Family Paper it is unsurpassed for the variety and completeness of its contents, and for the great care that is taken, while it shall amuse, to instruct and elevate the mind to a sense of its natural dignity. For the old, it will be found stored with experience—for the young, it will possess a charm that will not contaminate or cloy the taste. Published weekly by R. B. FITTS & CO., 22 School Street, Boston, Mass. Terms—Two Dollars per aunum, payable in advance. 32 8*

IMPORTANT INVENTION.—A new article of Machine Belting, made of a material never hitherto used for that purpose: 25 per cent. of power saved by its use. Its expense is 25 per cent. less than the patent stretched leather, or india rubber Belting. All sizes made and constantly kept on hand, from 1 inch in width to 30 inches.

CERTIFICATE.—J. McCarthy,—Having had several of your Flexible Cement Belts in use in our mill for the last 3 or 4 months, we cheerfully testify to their superiority, in many respects over any kind of belting we had hitherto used. ELIZUR CLARK, & Co.

This Belting is warranted to give satisfaction, or the money will be refunded. Manufactured only at Salina, Onondaga Co., N. Y. Orders are respectfully solicited. Address JOHN McCARTHY. 32 5*

ATTENTION.—Lumbermen, Mill Owners and Sawyers, who are still using the old stiff' jointed Noddle Pin in your saw mills, know ye not that G. Hotchkiss, of Windsor, N. Y., has invented and received letters patent for the "Equilibrium Noddle Iron," a new article that will prove the "ne plus ultra" for connecting the pitman and saw, as it has given entire satisfaction wherever tried, even by those who would hardly look at it at first. Its peculiar advantages are lightness and durability, being attached directly to the lower stirrup by a four pointed knuckle or pivot, in such manner that it can vibrate in either direction. It drew the first premium on miscellaneous articles at the State Fair at Syracuse.

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28 5t * Liege, Belgium, January 1850.

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Scientific Museum.

For the Scientific American.

Sequel to Remarks on Practical Tanning.

In respect to the Practical remarks on Tanning, we would observe that the results of the improvements within the last thirty years, are by far the most interesting, to the public. At that time the wholesale price of a common article of good stamp leather was 28 cts. a lb. much less firm and solid, than is now sold for 16; at that time a gain in weight on dry Buenos Ayres Hides of 30 per cent. was a matter of boasting—now the tanner who makes less gain than 65 is put into the second class, and 75 per cent. is a common result among those of the first class. Now the article wears double the time, and far more effectually protects the feet from wet or dampness. At that time the first bootmakers in the cities obtained their sole leather from England, even at an expense of 50 cts. a lb. Now a large proportion of the leather worn in England is tanned in the United States, and exported thence. The growth of our country and the foreign demand have greatly increased the quantity produced in this country, and new tanneries are being built to an extent which excites the apprehensions of many in the trade. But the improvements we have described, and the selection of favorable locations for water power and abundant supply of bark, have greatly reduced the expense of the manufacture, so that it can be sold at present times at a fair profit. The business is so simplified, also, that much cheaper labor can be used than formerly: then a tedious apprenceship of seven years was sought after by many of the sons of our farmers; now an apprentice is unknown in the trade. The "greenhorn" just landed on our shores finds a ready employment in the use of the shovel and wheelbarrow, at three times the wages he had with the spade in the fair fields of the Emerald Isle, and year by year he works his way upward, at increasing wages, until he finds himself the Boss, or foreman, of the tannery. Thousands are thus employed, and thousands more of their aged, infirm or youthful friends, left behind, them are supported by their earnings, or are brought over to join them by passages paid by their patient labor. The forest of hemlock is being fast levelled and destroyed to supply the tannin material, but new locations are continually opened, by means of railroads and canals, hitherto inaccessible; and although the supply is not inexhaustible, it is so extensive that we may rest assured many generations must pass away before it is all consumed, and man is compelled to seek a new material in America to protect the "*understanding*," so important to the human family.

Forks.

As late as the close of the sixteenth century, the English nobility were entirely innocent of forks, substituting therefor their fingers, with which they helped themselves and their neighbours in a style that would do honor to the noblest-born Turk of the present generation. Indeed, to a well-bred person of our civilized age, their habits at table would seem hardly to comport with decency. The bones and fragments were scattered indiscriminately over the board, and were removed by servants who several times during the meal went the rounds with a wooden instrument somewhat in the shape of a knife, wherewith they scattered the remains into a large basket known as "a voider." The fingers and hands of the banqueters were, it may be supposed, in no very enviable condition at the close of the feast.

Nevertheless, the English stomach is somewhat strong, and it did not seem necessary to English ingenuity to seek to remedy this evil.

The Italians, however, are blessed with finer and more delicate perceptions of decency, which led them to the invention of the fork. The new instrument, and the improvements in eating which it introduced, soon found their way into England; but our ancestors ridiculed the innovation as the result of foreign affectation, and forks did not come into general use in Britain until the beginning of the eighteenth century.

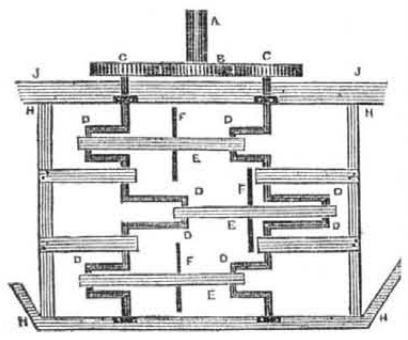
In Germany the invention was even more vigorously opposed—some saints, whose godliness seems to have been fully equalled by their filthiness, actually maintaining that the fork was contrary to nature and religion, that it was an insult to the Deity not to use the fingers, and that had Providence intended us to employ such instruments, it would have produced them ready for the hand of man.

The Greeks, the most refined race of antiquity, seem to have been totally unacquainted with the fork. Homer, describing a banquet of heroes, says that they divided it with their daggers, but leaves us to infer that they carried it to their mouths with their unassisted digits. Eastern nations, even at the present day, are equally barbarous; and travellers tell us that there are few sights more diverting than to see a Turkish belle of some thirty stone, devouring the leg of a pretty tough goose.

History of Propellers and Steam Navigation.

[Continued from page 248.]

FIG. 37.



TRIPLE CRANK PROPELLER.

This invention was like the majority of others, for making the paddles enter and leave the water vertically. The defect of the old revolving paddle wheel was described by the inventor, a Mr. Thos. Clark, to be something far superior to the paddle wheel. A frame is erected on the side of the vessel, and A is the main shaft, on the end of which is the cog wheel, B, meshing it into the two cog wheels, C C, to give motion to the two shafts having triple cranks, D D D, on each. The crank shafts are secured in the frame, J H, and revolve in proper bearings in the same. E E E are reciprocating bars secured on the extremities of the cranks of both shafts together. The paddles or blades, F F F, are secured on these reciprocating bars. The reciprocating bars, E E E, are secured on the cranks to work on them like centres, therefore when the crank shafts revolve, the paddles will receive a reciprocating motion, entering and leaving the water in a very good position, acting upon the water very effectually. The cranks are inclined to one another at equal angles, and the connecting bars preserve the cranks parallel to one another.

We saw a model of this very same description, about five years ago, made by a mechanic in this State, and it was tried at Whitehall, on Lake Champlain, with flattering hopes. It is twenty-five years, however, since it was first invented and its hypothesis of action is very erroneous in respect to any difference from a paddle wheel, having a radius like any of the cranks, for the terminations of the paddles move in circles, whose radii is equal to the length of the cranks. Paddle wheels can be built stronger and work with less friction than these cranks, but although this is all, it is a great deal, for the compact wheel, every part of which is trussed and arched, has wonderful advantages. There is no one, however, possessed of a sane mind, and who has any mechanical knowledge at all, that will perceive a loss of *triple* power by the employment of these cranks, in converting a rotary into a reciprocating motion. In fact this is so evident in the engraving, that anybody can see fully into the loss and gain of a change in a mechanical motion, which is nothing more than friction, although this is a great deal in some contrivances, beside others for this purpose. There are some who pretend that half the power is lost by the crank; in this case these paddles could not be moved; but we have seen them operate with good results on a small scale, but they are not fit to be employed on a large vessel.

Process of Hardening Steel.

Articles manufactured of steel for the purposes of cutting, are, almost without an exception, hardened from the anvil; in other words, they are taken from the forger to the hardener without undergoing any intermediate process; and such is the accustomed routine, that the mischief arising has escaped observation. The act of forging produces a strong scale or coating, which is spread over the whole of the blade; and to make the evil still more formidable, this scale or coating, is unequalled in substance, varying in proportion to the degree of heat communicated to the steel in forging; it is partly almost impenetrable to the action of water when immersed for the purpose of hardening. Hence it is that different degrees of hardness prevail in nearly every razor manufactured; this is evidently a positive defect, and so long as it continues to exist, great difference of temperature must exist likewise. Razor-blades not unfrequently exhibit the fact here stated in a very striking manner; what are termed clouds, or parts of unequal polish, derive their origin from this cause, and clearly, and distinctly, or rather distinctly though not clearly, show how far this partial coating has extended, and where the action of the water has been yielded to, and where resisted. It certainly cannot be matter of astonishment, that so few improvements have been made in the hardening of steel, when the evil here complained of so universally obtains as almost to warrant the supposition that no attempt has ever been made to remove it. The remedy, however, is easy and simple in the extreme, and so evidently efficient in its application, that it cannot but excite suprise that, in the present highly improved state of our manufactures, such a communication should be made as a discovery entirely new. Instead, therefore, of the customary mode of hardening the blade from the anvil, let it be passed immediately from the hands of the forger to the grinder; a slight application of the stone will remove the whole of the scale or coating, and the razor will then be properly prepared to undergo the operation of hardening with advantage. It will be easily ascertained that steel in this state heats in the fire with greater regularity, and that when immersed, the obstacles being removed to the immediate action of the water on the body of the steel, the latter becomes equally hard from one extremity to the other. To this may be added, that, as the lowest possible heat at which steel becomes hard is undubitably the best, the mode here recommended will be found the only one by which the process of hardening can be effected with a less portion of fire than is, or can be required in any other way. These observations are decisive, and will in all probability tend to establish in general use what cannot but be regarded as a very important improvement in the manufacturing of edged steel instruments.

Production of Gold and Silver in 1849.

We have it from the best authority that the mines of Mexico produced forty millions in gold and silver during the last year, the mines of South America about twenty millions, those of California about thirty, and the mines of Europe about fifty, making altogether one hundred and forty millions of gold and silver added to the specie currency of the world in one year, and probably next year the addition will be two hundred millions. We are within a short time of a complete revolution and revulsion in the currency of the whole world.

Singular Death.

Last week a daughter of Mr. Reuben Lukens, of Philadelphia, 13 years of age, died from the effects of poison introduced into the system, by picking a fever blister on her lip, with a pin. The deceased exhibited the appearance of persons when death results from the bite of venomous reptiles or insects. Great care should be exercised in the use of pins or needles, for the purpose of opening a blister or other sore. On no account should an old and corroded pin be used—a needle is best.

Discovery of a Yellow Camellia.

Mr. Fortune, the English traveller and botanical collector, has lately unexpectedly discovered a real yellow camellia. It proves to be one of the anemone-flowered race, the exterior petals being French white, and the central ones of a rich primrose yellow. He found it in blossom in a nursery garden in one of the towns in the north of China, which he had visited in search after tea plants.

A meeting has been held in Montreal, for the purpose of making preparations to send some of the products of Canada soil and ingenuity to the Grand Industrial Exhibition to be held in London next year. We hear of no organized movements yet in the United States.

LITERARY NOTICES.

Messrs. Phillips, Sampson & Co., Boston, have just issued a new and entertaining book under the title of "Noble Deeds of Woman," by Elizabeth Starling. It embodies the scattered records of female excellence under the classifications of Benevolence, Affection, Integrity, Humanity, Fortitude, Courage and Presence of Mind, Hospitality, Self-Control, Gratitude, Loyalty, Eloquence and Patriotism. This work will be found especially adapted to female reading, and cannot fail to interest all, and stimulate them to good deeds. We commend the work to married men, and also to the bachelors—the last named will find this a wonderful mirror, through which they will clearly see every thing to admire in female character. Dewitt & Davenport have the book for sale.

PORTLAND TRANSCRIPT.—This truly high-toned excellent family paper has just entered upon a new volume. We are glad to know that it enjoys the favor of a numerous subscription list. Gould & Elwell, publishers, Portland, Me.

OLIVE BRANCH.—T. F. Norris, publisher, Boston. No better Literary Journal exists in America than this enterprize. Talent and liberality are finely blended in its management. It justly ranks high, and is read extensively.

We are indebted to Messrs. Dewitt & Davenport, Tribune Building, for a copy of "Graham's American Magazine" for May. The original engravings consist of "The Mountain Spring," "Gay and Serious," and the "Game of Draughts." The contributions are as might be expected—highly entertaining.

PETERSON'S LADIES' NATIONAL MAGAZINE, for May is also for sale by the same firm. It is a good number.

SARTAIN'S MAGAZINE OF LITERATURE AND ART. The April number of Sartain has made its appearance, and is a superb one, like all previously issued. Messrs. Dewitt & Davenport, Agents, Tribune Buildings.

GODEY'S LADY'S BOOK, for April, is not behind its contemporaries, and is for sale at Long & Bro., 43 Ann st.

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